CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 99-096

ADOPTION OF FINAL SITE CLEANUP REQUIREMENTS
AND RECISION OF ORDER NO. 96-132 FOR:

999 ARQUES CORPORATION

for the property located at

999 EAST ARQUES AVENUE
SUBUNIT 1, STEWART DRIVE OPERABLE UNIT
SUNNYVALE, SANTA CLARA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter the Board), finds that:

1. **Site Location and Description**: Subunit 1 of the Stewart Drive Operable Unit consists of the 999 East Arques Avenue site and the southwestern portion of the 1077 East Arques Avenue site in Sunnyvale, Santa Clara County, near the intersection of U.S. Highway 101 and the Lawrence Expressway (see attached site map). Currently the site is occupied by a large office complex. The site is located in an area of low to flat relief approximately 5 miles south of San Francisco Bay. Areas surrounding the site are commercial, industrial, and residential.

2. **Site History**: Microwave Associates (West), Inc., now known as M/A-COM, Inc., owned and occupied the 999 East Arques site from August 1967 to October 1973. M/A-COM manufactured traveling wave tubes, microwave semiconductors, and radio frequency equipment at the site. M/A-COM ceased operations at the site in 1973. Manufacturing procedures used by M/A-COM include cleaning processes (vapor degreasing and ultrasonic cleaning) that used trichloroethylene (TCE). A sump was formerly located on the eastern portion of the site. M/A-COM is the only tenant still in existence known to have used this sump.

   In 1978, the 999 East Arques property was sold to New England Mutual Life Insurance Company (NEM). In 1979, Ametek Inc. became a tenant at the site. Ametek installed an acid waste neutralization system, and manufactured refurbished silicon crystals from 1979, until it vacated the site in 1987. In 1990, the buildings were demolished, and the

site was vacant until 1992, when the existing office complex was constructed following completion of excavation activities discussed in Finding 8.

3. **Operable Unit and Subunits**: In 1996 site cleanup requirements, the Board defined Stewart Drive Operable Unit (SDOU) and five subunits within SDOU. SDOU was defined to allow individual dischargers to proceed with investigation and cleanup independently of other dischargers, given evidence of possible commingling of groundwater pollution. Subunits 1-3 are sites which have been identified as sources of groundwater contamination; subunits 4 and 5 do not have any identified sources of contamination, but are impacted by sources on subunits 1 and 3. Subunit 1 consists of the 999 Arques Corporation site at 999 East Arques Avenue, and the southwestern portion of the CAE site located at 1077 East Arques Avenue. Subunit 2 consists of the Sobrato Development site located at 968-970 Stewart Drive in Sunnyvale. Subunit 3 consists of the northern portion of the CAE site. Subunit 4 consists of the area north of the subunit 3. Subunit 5 consists of the area north of subunits 1 and 2.

   It is the Board's intent that, commingling notwithstanding, the dischargers named for each subunit are largely responsible for soil and groundwater pollution in their respective subunit. As additional information is generated in each subunit, the Board may modify the dischargers named in each subunit, or the subunit boundaries.

4. **Named Dischargers**: In 1992 M/A-COM, Ametek, and NEM settled all disputes among them regarding the pollution at and emanating from the site, and jointly formed the 999 Arques Corporation. The 999 Arques Corporation has assumed full responsibility for meeting all cleanup requirements and hereinafter is referred to as the discharger.

   The Board recognizes the 999 Arques Corporation to be the party primarily responsible for meeting the requirements of this Order. Should the 999 Arques Corporation fail to comply with the prohibitions, specifications, and provisions of this Order, the Board will consider adding M/A-COM, Inc., Ametek, Inc., and NEM to this Order as dischargers.

   If additional information is submitted indicating that other parties caused or permitted any waste to be discharged on the site where it entered or could have entered waters of the state, the Board will consider adding that party's name to this order.

5. **Regulatory Status**: The site is subject to NPDES Permit Order No. 99-051 adopted July 21, 1999 and was subject to Revised Site Cleanup Requirements Order No. 96-132 adopted September 18, 1996. The purpose of this order is to update the Site Cleanup Requirements to include tasks necessary to implement the Final Remedial Action Plan for subunit 1.

6. **Site Hydrogeology**: The area in the vicinity of subunit 1 is underlain by unconsolidated alluvial channel and overbank deposits of clay, silt, sand, and gravel. The deposits are of

variable thickness and laterally discontinuous. The uppermost deposits have been subdivided into four general aquifer (water producing) zones, designated as the A, B1, B2, and B3 aquifers. The aquifers are separated by semi-permeable to relatively impermeable saturated zones (aquitards), ranging from 5 to 20 feet thick. The unconfined, shallow A aquifer is generally encountered at a depth of 10 to 20 feet below the ground surface. The confined B1, B2, and B3 aquifers are generally encountered between 20 to 45 feet, 45 to 60, and 70 to 80 feet, respectively, below ground surface. Groundwater flows preferentially through channelized coarse-grained deposits within each aquifer. The groundwater gradient within the A and B aquifers in the area is generally toward the north-northeast.

7. **Remedial Investigation**: TCE is the predominant volatile organic compound (VOC) detected in vadose zone soil in subunit 1 of the Stewart Drive OU; the greatest historic VOC concentrations in soil were detected on the eastern portion of the subunit, in the area of the former sump. Prior to remediation, TCE concentrations in soil ranged from below reporting limits to 12 ppm. Soils were also impacted with other VOCs, including 1,1,1-trichloroethane (TCA), tetrachloroethane (PCE), methyl ethyl ketone (MEK), and toluene. The A- and B-aquifer groundwater has also been impacted by VOCs. The highest VOC concentrations in groundwater have also been detected in the area of the former sump, on the eastern portion of the subunit. TCE has historically been detected at concentrations up to 390,000 ppb in the A aquifer, and up to 950,000 ppb in the B1-aquifer in this area. TCE concentrations currently detected in this area range up to 23,000 ppb in the A-aquifer and 140,000 ppb in the B1 aquifer. These concentrations are indicate the presence of dense non-aqueous phase liquids (DNAPLs, or free product). Groundwater contamination originating from the 999 East Arques site generally extends northward in the Stewart Drive Operable Unit, from subunit 1 into subunits 2 and 5.

   Groundwater contamination originating from subunit 1 of the Stewart Drive OU is commingled with contamination originating from other Stewart Drive OU sources, and other upgradient sites. However, data indicate that contamination originating from subunit 1 of the Stewart Drive OU is located largely within the area of Stewart Drive OU subunits 1, 2, and 5, and that subunit 1 of the Stewart Drive OU is the primary contributor to Stewart Drive OU subunit 1, 2, and 5 groundwater contamination.

8. **Interim Remedial Measures**: In 1987, the structures used to store and/or process hazardous substances were closed and the sumps were removed from the site. In 1990, approximately 6000 cubic yards of VOC impacted soil was excavated, remediated, and placed back on-site. Groundwater remediation, focusing on source control, began in 1990 with the installation and operation of two A-aquifer groundwater extraction wells. Groundwater source control measures were expanded in 1995 with the installation of a B1-aquifer extraction well. The extraction system is currently extracting approximately 30,200 gallons per day from the A-aquifer, and 7,300 gallons per day in the B1-aquifer.

9. **Adjacent Sites**: In addition to the Stewart Drive OU sites, several other sites are located in the area which are also sources of soil and/or groundwater pollution. Immediately east and south of the Stewart Drive OU is Operable Unit 1 (OU1), which consists of two federal Superfund sites. OU1 includes the National Semiconductor Corporation (NSC) site at 2900 Semiconductor Drive, the former United Technologies Corporation (UTC) site at 1050 E. Arques Avenue, the Advanced Micro Devices site at 1165 E. Arques Avenue, and the commingled areas extending downgradient of the sites. Final Remedial Action Plans (RAPs) for the facilities in OU1 were adopted by the Board in September 1991. As with the Stewart Drive OU, OU1 is divided into subunits.

Investigations conducted in OU1 and the Stewart Drive OU in 1994 and 1995 indicate that groundwater contamination originating from both Operable Units is commingled along the area of the common OU1/Stewart Drive OU boundary. However, the location of the boundary approximates the extent of significant contamination originating within each Operable Unit. Groundwater contamination originating in OU1 is largely limited to the area of OU1; groundwater contamination originating in the Stewart Drive OU is largely limited to the area of the Stewart Drive OU.

Southwest and upgradient of the Stewart Drive OU is the Commercial Street Operable Unit (CSOU), which includes the commingled VOC pollution plume originating from the Schlumberger Technologies Corporation site, located at 974 East Arques Avenue, and the Mohawk Laboratories site, located at 932 Kifer Road. A VOC release from the Western Precision site, located at 230 Commercial Street, may have impacted groundwater within CSOU. The Board has adopted orders requiring further characterization and cleanup of groundwater at the Schlumberger and Mohawk sites, and has required additional investigation at the Western Precision site. Recent data indicate that significant levels of VOCs originating from one or more of these sites has impacted subunit 1 of SDOU. Although remedial measures have been implemented in CSOU, and data suggest that migration of CSOU pollution into SDOU is reduced, additional monitoring and cleanup is necessary to determine whether the SDOU and CSOU pollution plumes will remain largely separable.

The Board intends to update existing orders and adopt new orders for sites as appropriate. Should additional information generated for these and other facilities in the area indicate that VOC groundwater pollution migrating from sources outside of SDOU is ongoing and significantly affects long-term groundwater cleanup in SDOU, the Board may revise this Order to modify the OU boundary or the dischargers, tasks, or groundwater cleanup standards specified in the Order.

10. **Feasibility Study**: 999 Arques Corporation, Sobrato Development Company, and Inprint Corporation jointly submitted a Final Remedial Action Plan for subunits 1, 2, and 5 of SDOU, dated June 9, 1999. The report includes a detailed screening of alternatives for soil and groundwater remedial actions necessary to meet specific remedial action

objectives, including Applicable or Relevant and Appropriate Requirements (ARARs) required under federal or state law, and "To Be Considered" factors (TBCs) designated under the National Contingency Plan. Potential remedial alternatives were evaluated based on long-term and short-term effectiveness, implementability, and cost of meeting remedial action objectives. Remedial alternatives included no action, groundwater pumping and treatment, slurry walls, extraction trenches, reactive walls, in-well vapor stripping, air sparging, in-situ chemical oxidation, natural attenuation, and enhanced bioremediation

11. **Cleanup Plan**: Based on the results of the evaluation, the alternative recommended in the FRAP is continued operation of the current groundwater extraction system and discharge of treated groundwater to surface waters under NPDES permit. Groundwater extracted from wells in the most highly impacted areas removes and hydraulically controls the most significant VOC mass within subunits 1 and 2. Natural processes in subunits 1, 2, and 5 further reduces VOCs in groundwater. The FRAP proposes continued monitoring of natural attenuation at up to 71 groundwater wells, including two new wells. The FRAP also includes a contingency plan for additional actions to be implemented should significant increases in VOC concentrations indicate continued migration of VOCs from CSOU. No additional soil remediation is necessary given the previous removal and treatment of soil from subunit 1.

The FRAP is based largely on several years of data which indicate that the current system has prevented migration of high-level VOCs and has lowered VOC concentrations in subunits 1 and 2 of SDOU. Limited data also indicate that VOCs in groundwater in subunit 5, which are beyond hydraulic capture of the current groundwater pump and treat system, are naturally attenuating.

The FRAP is supplemented by provisions in the Final Site Cleanup Requirements, which include a task requiring a deed restriction for the area within subunit 1 and a self-monitoring plan more extensive than that proposed in the FRAP. A deed restriction for subunit 1 is necessary to prevent exposure to VOCs in groundwater and to prevent activities which may exacerbate groundwater pollution. More frequent sampling of selected groundwater monitoring wells located in and downgradient of on-site source areas is necessary to provide data to aid in the distinction between VOC mass which originates from on-site source areas versus upgradient source areas.

12. **Risk Assessment**: The risk assessment included an evaluation of chemicals of concern, primarily trichloroethene and cis-1,2-dichloroethene, as well as acetone, chloroform, 1,1-dichloroethane, 1,1,-dichloroethene, trans-1,2-dichloroethene, tetrachloroethene, and 1,1-1-trichloroethane in soil and groundwater. Chemicals were evaluated for carcinogenic and non-carcinogenic effects over short and long-term exposure, and under several exposure scenarios. Exposure scenarios include inhalation, ingestion, and dermal contact. The risk assessment is based on current land use conditions, which is

commercial in subunit 1 and 2 of SDOU, and commercial and residential in subunit 5 of SDOU. There is no reasonably foreseeable future land use other than the current land use.

The calculated hazard indexes from ingestion, inhalation and dermal exposure scenarios to VOCs range from 0.05 to 0.6. The calculated lifetime cancer risk from ingestion, inhalation and dermal exposure to impacted shallow groundwater ranges from 1×10^{-6} to 7×10^{-4}. For comparison, the Board considers the following risks to be acceptable at remediation sites: a hazard index of 1.0 or less for non-carcinogens, and an excess cancer risk of 10^{-4} or less for carcinogens. Under this criteria the calculated risk due to ingestion of shallow groundwater is not acceptable. However, such exposure is unlikely as shallow groundwater is encountered at depths greater than 7 feet below ground surface, and because no drinking water wells have been identified in or immediately downgradient of subunits 1, 2, and 5 of SDOU. The more likely means of exposure to chemicals of concern is through inhalation of indoor and outdoor air containing VOCs volatilized from groundwater. Calculations indicate that such exposure does not present a significant human health risk.

Due to unacceptable risk of that will be present at the site pending full remediation, institutional constraints are appropriate to limit on-site exposure. Institutional constraints include a deed restriction that notifies future owners of sub-surface contamination and prohibits the use of shallow groundwater beneath the site as a source of drinking water until cleanup standards are met.

13. **Basis for Cleanup Standards**

a. **General**: State Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California," applies to this discharge and requires attainment of background levels of water quality, or the highest level of water quality which is reasonable if background levels of water quality cannot be restored. Cleanup levels other than background must be consistent with the maximum benefit to the people of the State, not unreasonably affect present and anticipated beneficial uses of such water, and not result in exceedance of applicable water quality objectives. The previously-cited cleanup plan confirms the Board's initial conclusion that background levels of water quality cannot be restored due to the presence of free product in the source area and the limited cost-effectiveness of available technologies, and possibly the migration of significant levels of VOCs from upgradient off-site areas. This order and its requirements are consistent with Resolution No. 68-16.

State Board Resolution No. 92-49, "Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304," applies to this discharge. This order and its requirements are consistent with the provisions of Resolution No. 92-49, as amended.

b. **Beneficial Uses**: The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on June 21, 1995. This updated and consolidated plan represents the Board's master water quality control planning document. The revised Basin Plan was approved by the State Water Resources Control Board and the Office of Administrative Law on July 20, 1995, and November 13, 1995, respectively. A summary of regulatory provisions is contained in Title 23, California Code of Regulations, Section 3912. The Basin Plan defines beneficial uses and water quality objectives for waters of the State, including surface waters and groundwaters.

Board Resolution No. 89-39, "Sources of Drinking Water," defines potential sources of drinking water to include all groundwater in the region, with limited exceptions for areas of high TDS, low yield, or naturally-high contaminant levels. Groundwater underlying and adjacent to the site qualifies as a potential source of drinking water.

The Basin Plan designates the following potential beneficial uses of groundwater underlying and adjacent to the site:

o Municipal and domestic water supply
o Industrial process water supply
o Industrial service water supply
o Agricultural water supply

At present, there is no known use of groundwater underlying the site for the above purposes.

c. **Basis for Groundwater Cleanup Standards**: The groundwater cleanup standards for the site are based on applicable water quality objectives and are the more stringent of EPA and California primary maximum contaminant levels (MCLs). Cleanup to this level will result in acceptable residual risk to humans.

14. **Future Changes to Cleanup Standards**: The goal of this remedial action is to restore the beneficial uses of groundwater underlying and adjacent to the site. Results from other sites suggest that full restoration of beneficial uses to groundwater as a result of active remediation at this site may not be possible. If full restoration of beneficial uses is not technologically nor economically achievable within a reasonable period of time, then the discharger may request modification to the cleanup standards or establishment of a containment zone, a limited groundwater pollution zone where water quality objectives are exceeded. Conversely, if new technical information indicates that cleanup standards can be surpassed, the Board may decide that further cleanup actions should be taken.

15. **Reuse or Disposal of Extracted Groundwater**: Board Resolution No. 88-160 allows discharges of extracted, treated groundwater from site cleanups to surface waters only if it has been demonstrated that neither reclamation nor discharge to the sanitary sewer is technically and economically feasible.

16. **Basis for 13304 Order**: The discharger has caused or permitted waste to be discharged or deposited where it is or probably will be discharged into waters of the State and creates or threatens to create a condition of pollution or nuisance.

17. **Cost Recovery**: Pursuant to California Water Code Section 13304, the discharger is hereby notified that the Board is entitled to, and may seek reimbursement for, all reasonable costs actually incurred by the Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this order.

18. **CEQA**: This action is an order to enforce the laws and regulations administered by the Board. As such, this action is categorically exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to Section 15321 of the Resources Agency Guidelines.

19. **Notification**: The Board has notified the discharger and all interested agencies and persons of its intent under California Water Code Section 13304 to prescribe site cleanup requirements for the discharge, and has provided them with an opportunity to submit their written comments.

20. **Public Hearing**: The Board, at a public meeting, heard and considered all comments pertaining to this discharge.

IT IS HEREBY ORDERED, pursuant to Section 13304 of the California Water Code, that the discharger (or its agents, successors, or assigns) shall cleanup and abate the effects described in the above findings as follows:

A. PROHIBITIONS

1. The discharge of wastes or hazardous substances in a manner which will degrade water quality or adversely affect beneficial uses of waters of the State is prohibited.

2. Further significant migration of wastes or hazardous substances through subsurface transport to waters of the State is prohibited.

3. Activities associated with the subsurface investigation and cleanup which will cause significant adverse migration of wastes or hazardous substances are prohibited.

B. CLEANUP PLAN AND CLEANUP STANDARDS

1. **Implement Cleanup Plan**: The discharger shall implement the cleanup plan described in finding 11.

2. **Groundwater Cleanup Standards**: The following groundwater cleanup standards shall be met in all wells identified in the Self-Monitoring Program:

Constituent	Standard (ug/l)	Basis
Acetone	700	EPA IRIS Ref. Dose
Chloroform	100*	California/EPA MCL
1,1-Dichloroethane	5	California MCL
1,1-Dichloroethene	6	California MCL
Cis-1,2-Dichloroethene	6	California MCL
Trans-1,2-Dichloroethene	10	California MCL
Tetrachloroethene	5	California/EPA MCL
1,1,1-Trichloroethane	200	California/EPA MCL
Trichloroethene	5	California/EPA MCL
Freon 113	1200	California MCL

* the discharger may meet this limit for total trihalomethanes

C. TASKS

1. PROPOSED INSTITUTIONAL CONSTRAINTS

COMPLIANCE DATE: January 31, 2000

Submit a technical report acceptable to the Executive Officer documenting procedures to be used by the discharger to prevent or minimize human exposure to soil and groundwater contamination prior to meeting cleanup standards. Such procedures shall include a deed restriction prohibiting the use of shallow groundwater as a source of drinking water on the 999 Arques Avenue Property.

2. IMPLEMENTATION OF INSTITUTIONAL CONSTRAINTS

COMPLIANCE DATE: 60 days after Executive Officer approval

Submit a technical report acceptable to the Executive Officer documenting that the proposed institutional constraints have been implemented.

3. FIVE-YEAR STATUS REPORT

COMPLIANCE DATE: November 30, 2004

Submit a technical report acceptable to the Executive Officer evaluating the effectiveness of the approved cleanup plan. The report should include:

a. Summary of effectiveness in controlling contaminant migration and protecting human health and the environment
b. Comparison of contaminant concentration trends with cleanup standards
c. Comparison of anticipated versus actual costs of cleanup activities
d. Performance data (e.g. groundwater volume extracted, chemical mass removed, mass removed per million gallons extracted)
e. Cost effectiveness data (e.g. cost per pound of contaminant removed)
f. Summary of additional investigations (including results) and significant modifications to remediation systems
g. Additional remedial actions proposed to meet cleanup standards (if applicable) including time schedule

If cleanup standards have not been met and are not projected to be met within a reasonable time, the report should assess the technical practicability of meeting cleanup standards and may propose an alternative cleanup strategy.

4. PROPOSED CURTAILMENT

COMPLIANCE DATE: 60 days prior to proposed curtailment

Submit a technical report acceptable to the Executive Officer containing a proposal to curtail remediation. Curtailment includes system closure (e.g. well abandonment), system suspension (e.g. cease extraction but wells retained), and significant system modification (e.g. major reduction in extraction rates, closure of individual extraction wells within extraction network). The report should include the rationale for curtailment. Proposals for final closure should demonstrate that cleanup standards have been met, contaminant concentrations are stable, and contaminant migration potential is minimal.

5. IMPLEMENTATION OF CURTAILMENT

COMPLIANCE DATE: 60 days after Executive Officer approval

Submit a technical report acceptable to the Executive Officer documenting completion of the tasks identified in Task 8.

6. EVALUATION OF NEW HEALTH CRITERIA

COMPLIANCE DATE: 90 days after requested by Executive Officer

Submit a technical report acceptable to the Executive Officer evaluating the effect on the approved cleanup plan of revising one or more cleanup standards in response to revision of drinking water standards, maximum contaminant levels, or other health-based criteria.

7. EVALUATION OF NEW TECHNICAL INFORMATION

COMPLIANCE DATE: 90 days after requested by Executive Officer

Submit a technical report acceptable to the Executive Officer evaluating new technical information which bears on the approved cleanup plan and cleanup standards for this site. In the case of a new cleanup technology, the report should evaluate the technology using the same criteria used in the feasibility study. Such technical reports shall not be requested unless the Executive Officer determines that the new information is reasonably likely to warrant a revision in the approved cleanup plan or cleanup standards.

8. **Delayed Compliance**: If the discharger is delayed, interrupted, or prevented from meeting one or more of the completion dates specified for the above tasks, the discharger shall promptly notify the Executive Officer and the Board may consider revision to this Order.

9. **Report Consolidation**: Technical reports submitted to comply with the above tasks may be combined with analogous reports for other subunits of the Stewart Drive OU (e.g. Remedial Action Plan covering more than one subunit), provided that the combined report fully addresses the task for this subunit.

C. **PROVISIONS**

1. **No Nuisance**: The storage, handling, treatment, or disposal of polluted soil or groundwater shall not create a nuisance as defined in California Water Code Section 13050(m).

2. **Good O&M**: The discharger shall maintain in good working order and operate as

efficiently as possible any facility or control system installed to achieve compliance with the requirements of this Order.

3. **Cost Recovery**: The discharger shall be liable, pursuant to California Water Code Section 13304, to the Board for all reasonable costs actually incurred by the Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this Order. If the site addressed by this Order is enrolled in a State Board-managed reimbursement program, reimbursement shall be made pursuant to this Order and according to the procedures established in that program. Any disputes raised by the discharger over reimbursement amounts or methods used in that program shall be consistent with the dispute resolution procedures for that program.

4. **Access to Site and Records**: In accordance with California Water Code Section 13267(c), the discharger shall permit the Board or its authorized representative:

   a. Entry upon premises in which any pollution source exists, or may potentially exist, or in which any required records are kept, which are relevant to this Order.

   b. Access to copy any records required to be kept under the requirements of this Order.

   c. Inspection of any monitoring or remediation facilities installed in response to this Order.

   d. Sampling of any groundwater or soil which is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by the discharger.

5. **Self-Monitoring Program**: The discharger shall comply with the Self-Monitoring Program as attached to this Order and as may be amended by the Executive Officer. Reports submitted to comply with this provision may be combined with analogous reports for other subunits of the Stewart Drive OU, provided that the combined report fully addresses the Self-Monitoring Program requirements for this subunit.

6. **Contractor/ Consultant Qualifications**: All hydrogeologic documents shall be signed by and stamped with the seal of a California registered geologist, a California certified engineering geologist, or a California registered civil engineer.

7. **Lab Qualifications**: All samples shall be analyzed by State-certified laboratories

or laboratories accepted by the Board using approved EPA methods for the type of analysis to be performed. All laboratories shall maintain quality assurance/quality control (QA/QC) records for Board review. This provision does not apply to analyses that can only reasonably be performed on-site (e.g. temperature).

8. **Document Distribution**: All correspondence, technical reports, and other documents pertaining to compliance with this Order shall be sent to the attention of the designated Board staff person. Copies of all correspondence, technical reports, and other documents pertaining to compliance with this Order shall be provided to the following agencies:

   a. City of Sunnyvale, Department of Public Safety
   b. County of Santa Clara, Department of Environmental Health
   c. Santa Clara Valley Water District

   The Executive Officer may modify this distribution list as needed.

9. **Reporting of Changed Owner or Operator**: To the extent practicable, the discharger shall file a technical report on any changes in site occupancy or ownership associated with the property described in this Order.

10. **Reporting of Hazardous Substance Release**: If any hazardous substance is discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, the discharger shall report such discharge to the Regional Board by calling (510) 622-2343 during regular office hours (Monday through Friday, 8:00 to 5:00).

    A written report shall be filed with the Board within five working days. The report shall describe: the nature of the hazardous substance, estimated quantity involved, duration of incident, cause of release, estimated size of affected area, nature of effect, corrective actions taken or planned, schedule of corrective actions planned, and persons/agencies notified.

    This reporting is in addition to reporting to the Office of Emergency Services required pursuant to the Health and Safety Code.

11. **Rescission of Existing Order**: This Order rescinds Order No. 96-132.

12. **Periodic SCR Review**: The Board will review this Order periodically and may revise it when necessary.

I, Lawrence P. Kolb, Assistant Executive Officer, do hereby certify that the foregoing is a full,

true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on November 18, 1999.

Lawrence P. Kolb
Assistant Executive Officer

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FAILURE TO COMPLY WITH THE REQUIREMENTS OF THIS ORDER MAY SUBJECT YOU TO ENFORCEMENT ACTION, INCLUDING BUT NOT LIMITED TO: IMPOSITION OF ADMINISTRATIVE CIVIL LIABILITY UNDER WATER CODE SECTIONS 13267 OR 13350, OR REFERRAL TO THE ATTORNEY GENERAL FOR INJUNCTIVE RELIEF OR CIVIL OR CRIMINAL LIABILITY

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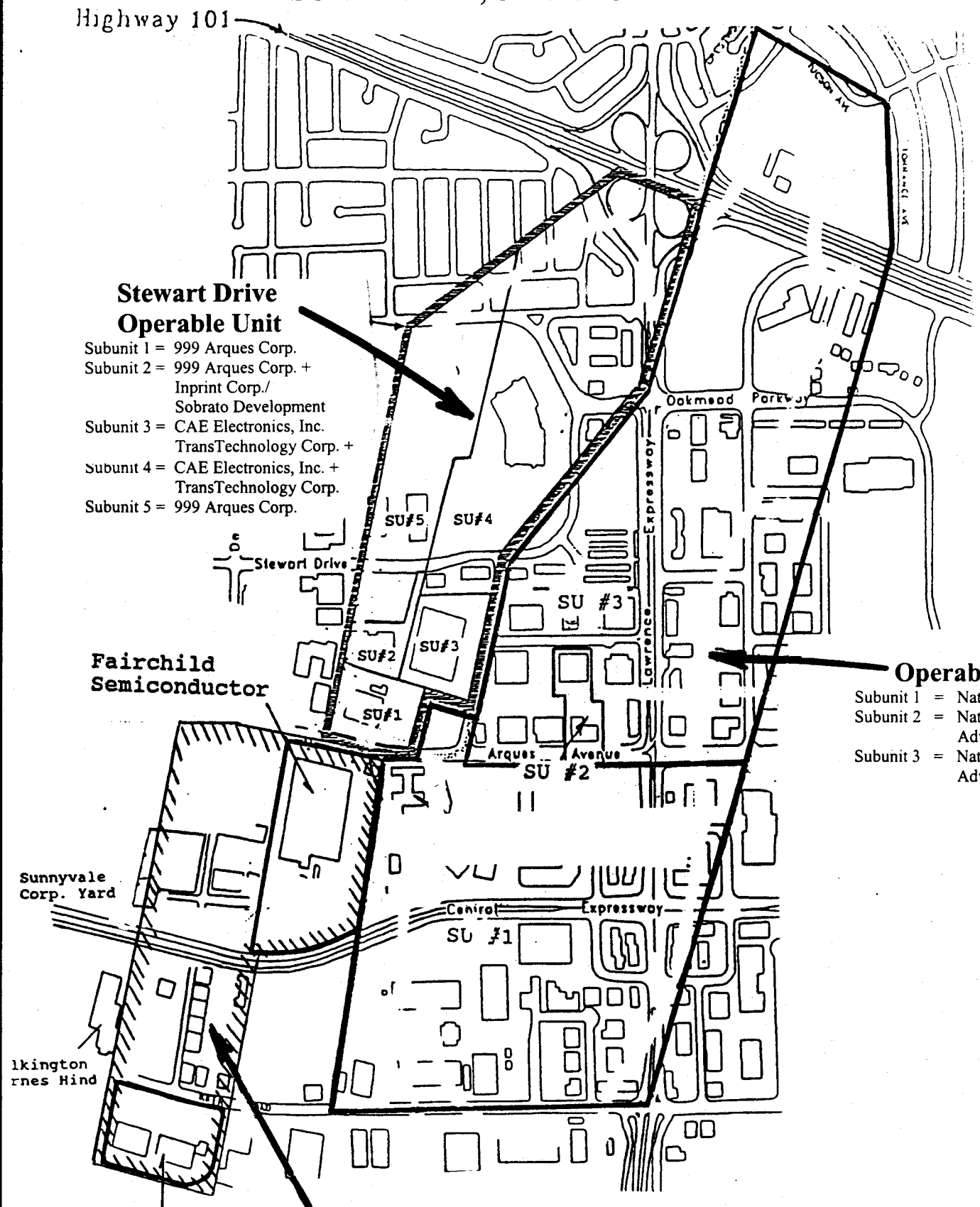
Attachments: Site Map
Self-Monitoring Program

LOCATION OF OPERABLE UNITS AND SUBUNITS
SUNNYVALE, SANTA CLARA COUNTY



Stewart Drive Operable Unit

Subunit 1 = 999 Arques Corp.
Subunit 2 = 999 Arques Corp. + Inprint Corp./ Sobrato Development
Subunit 3 = CAE Electronics, Inc. TransTechnology Corp. +
Subunit 4 = CAE Electronics, Inc. + TransTechnology Corp.
Subunit 5 = 999 Arques Corp.

Fairchild Semiconductor

Operable Unit 1

Subunit 1 = National Semiconductor
Subunit 2 = National Semiconductor + Advanced Micro Devices
Subunit 3 = National Semiconductor + Advanced Micro Devices

Commercial Street Operable Unit

Subunit 1 = Mohawk Labs
Subunit 2 = Mohawk Labs + Fairchild Semiconductor

FIGURE 1
LOCATION OF STUDY AREA AND ADJACENT OPERABLE UNITS

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM FOR:

999 ARQUES CORPORATION

for the property located at

999 ARQUES AVENUE
SUBUNIT 1, STEWART DRIVE OPERABLE UNIT
SUNNYVALE, SANTA CLARA COUNTY

1. **Authority and Purpose**: The Board requests the technical reports required in this Self-Monitoring Program pursuant to Water Code Sections 13267 and 13304. This Self-Monitoring Program is intended to document compliance with Board Order No. 99-096 (site cleanup requirements).

2. **Monitoring**: The discharger shall measure groundwater elevations semi-annually in all A-aquifer monitoring wells located on subunit 1, and annually in all B-aquifer monitoring wells in subunit 1, and shall collect and analyze representative samples of groundwater according to Table 1 (attached). The discharger shall sample any new monitoring or extraction wells quarterly and analyze groundwater samples for the utilizing EPA Method 8010. The discharger may propose changes in Table 1; any proposed changes are subject to Executive Officer approval.

3. **Annual Monitoring Reports**: The discharger shall submit annual monitoring reports to the Board no later than 30 days following the end of the year (e.g. first annual report due January 30, 2000). The reports shall include:

   a. Transmittal Letter: The transmittal letter shall discuss any violations during the reporting period and actions taken or planned to correct the problem. The letter shall be signed by the discharger's principal executive officer or his/her duly authorized representative, and shall include a statement by the official, under penalty of perjury, that the report is true and correct to the best of the official's knowledge.

   b. Groundwater Elevations: Groundwater elevation data shall be presented in tabular form, and a groundwater elevation map should be prepared for each monitored water-bearing zone. Historical groundwater elevations should be included with

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2. **Monitoring**: The discharger shall measure groundwater elevations semi-annually in all A-aquifer monitoring wells located on subunit 1, and annually in all B-aquifer monitoring wells in subunit 1, and shall collect and analyze representative samples of groundwater according to Table 1 (attached). The discharger shall sample any new monitoring or extraction wells quarterly and analyze groundwater samples for the utilizing EPA Method 8010. The discharger may propose changes in Table 1; any proposed changes are subject to Executive Officer approval.

3. **Annual Monitoring Reports**: The discharger shall submit annual monitoring reports to the Board no later than 30 days following the end of the year (e.g. first annual report due January 30, 2000). The reports shall include:

    a. Transmittal Letter: The transmittal letter shall discuss any violations during the reporting period and actions taken or planned to correct the problem. The letter shall be signed by the discharger's principal executive officer or his/her duly authorized representative, and shall include a statement by the official, under penalty of perjury, that the report is true and correct to the best of the official's knowledge.

    b. Groundwater Elevations: Groundwater elevation data shall be presented in tabular form, and a groundwater elevation map should be prepared for each monitored water-bearing zone. Historical groundwater elevations should be included with

each annual report.

c. Groundwater Analyses: Groundwater sampling data shall be presented in tabular form, and an isoconcentration map should be prepared for one or more key contaminants for each monitored water-bearing zone, as appropriate. The report shall indicate the analytical method used and detection limits obtained for each reported constituent. Historical groundwater sampling results shall be included in each annual report. The report shall describe any significant increases in contaminant concentrations since the last report, and any measures proposed to address the increases. Supporting data, such as lab data sheets, need not be included (however, see record keeping - below).

d. Groundwater Extraction: If applicable, the report shall include groundwater extraction results in tabular form, for each extraction well and for the site as a whole, expressed in gallons per minute and total groundwater volume for the reporting period. The report shall also include contaminant removal results, from groundwater extraction wells and from other remediation systems (e.g. soil vapor extraction), expressed in units of chemical mass per day and mass for the reporting period. Historical mass removal results shall be included in each annual report.

e. Status Report: The annual report shall describe relevant work completed during the reporting period (e.g. site investigation, interim remedial measures) and work planned for the following year.

4. **Violation Reports**: If the discharger violates requirements in the Site Cleanup Requirements, then the discharger shall notify the Board office by telephone as soon as practicable once the discharger has knowledge of the violation. Board staff may, depending on violation severity, require the discharger to submit a separate technical report on the violation within five working days of telephone notification.

5. **Other Reports**: The discharger shall notify the Board prior to any site activities, such as construction or underground tank removal, which have the potential to cause further migration of contaminants or which would provide new opportunities for site investigation.

6. **Record Keeping**: The discharger or his/her agent shall retain data generated for the above reports, including lab results and QA/QC data, for a minimum of six years after origination.

7. **SMP Revisions**: Revisions to the Self-Monitoring Program may be ordered by the Executive Officer, either on his/her own initiative or at the request of the discharger. Prior to making SMP revisions, the Executive Officer will consider the burden, including

costs, of associated self-monitoring reports relative to the benefits to be obtained from these reports.

I, Lawrence P. Kolb, Assistant Executive Officer, hereby certify that this Self-Monitoring Program was adopted by the Board on November 18, 1999.

Lawrence P. Kolb
Assistant Executive Officer

TABLE 1. Groundwater Monitoring Well Sampling and Analyses Plan

Well #	Sampling Frequency	Analyses	Well #	Sampling Frequency	Analyses
ARQ1B	5	8010	ARQ33B	5	8015*
ARQ2B	5	8010	ARQ34B	A	8010
ARQ3	A	8010	ARQ35B	5	8010
ARQ4	5	8010	ARQ36B	5	8010
ARQ5	5	8010	ARQ37B	5	8010
ARQ6	5	8010	ARQ41B	SA	8010
ARQ7	5	8010	ARQ42B	SA	8010
ARQ9	5	8010	ARQ43B	SA	8010
ARQ10	A	8010	ARQ45B	A	8010
ARQ11	5	8010	ARQ46B	A	8010
ARQ12A	A	8010	ARQ47B	5	8010
ARQ14A	A	8010	LF01	5	8010
ARQ16	A	8010	LF01A	5	8010
ARQ17	A	8010	LF11	A	8010
ARQ21	SA	8010	LF12	5	8010
ARQ23B	5	8010	LF13	5	8010
ARQ24B	A	8010	LF14	5	8010
ARQ25B	A	8010	LF17	5	8010
ARQ26B	5	8010	LF22	5	8010
ARQ27B	A	8010	LF23	A	8010
ARQ30B	5	8010	LF28	A	8010
ARQ32B	A	8015*			

Key: SA = Semi-Annually
A = Annually
5 = Every 5 years

8010 = EPA Method 8010 or equivalent
8015 = EPA Method 8015 or equivalent for acetone